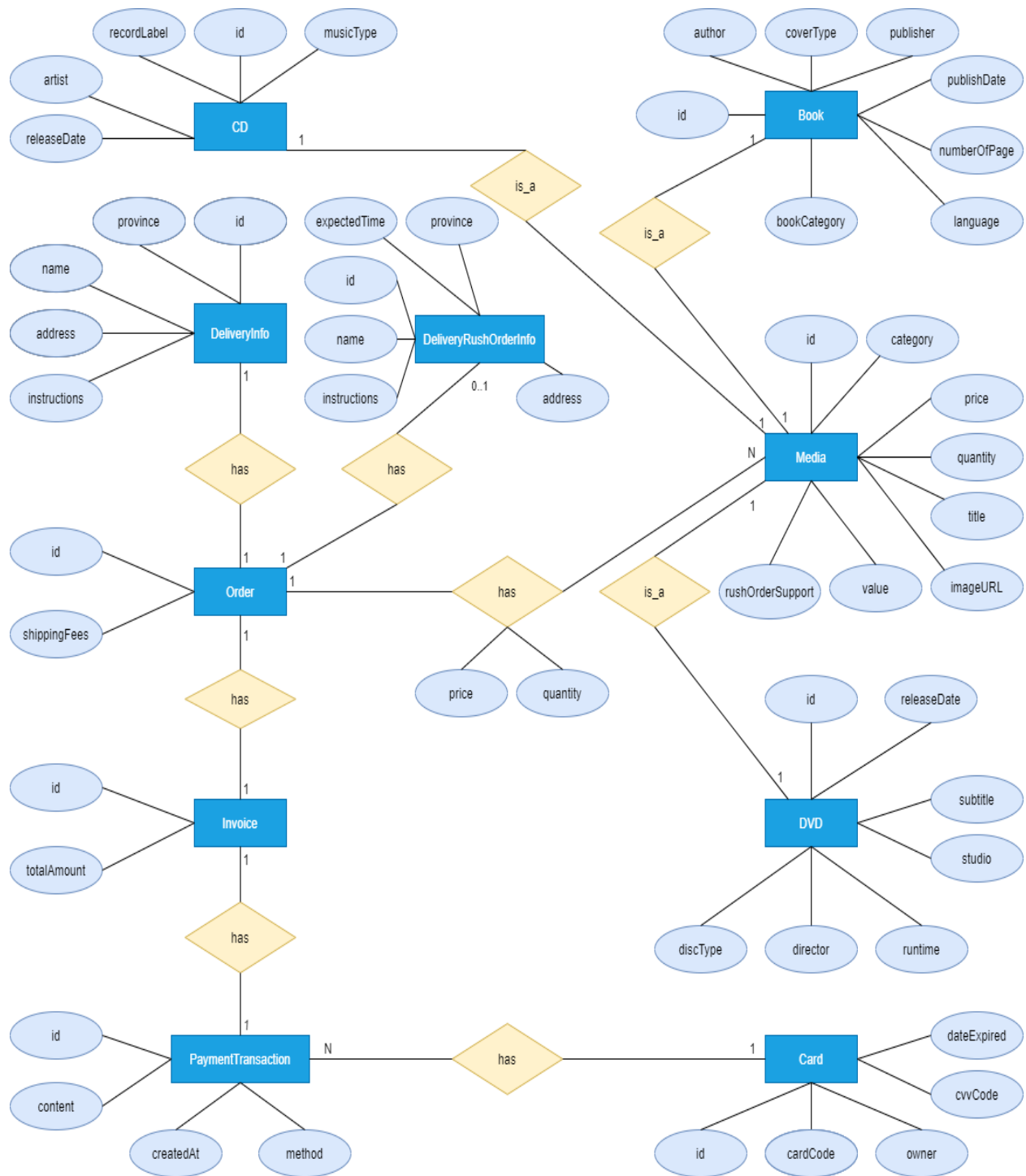


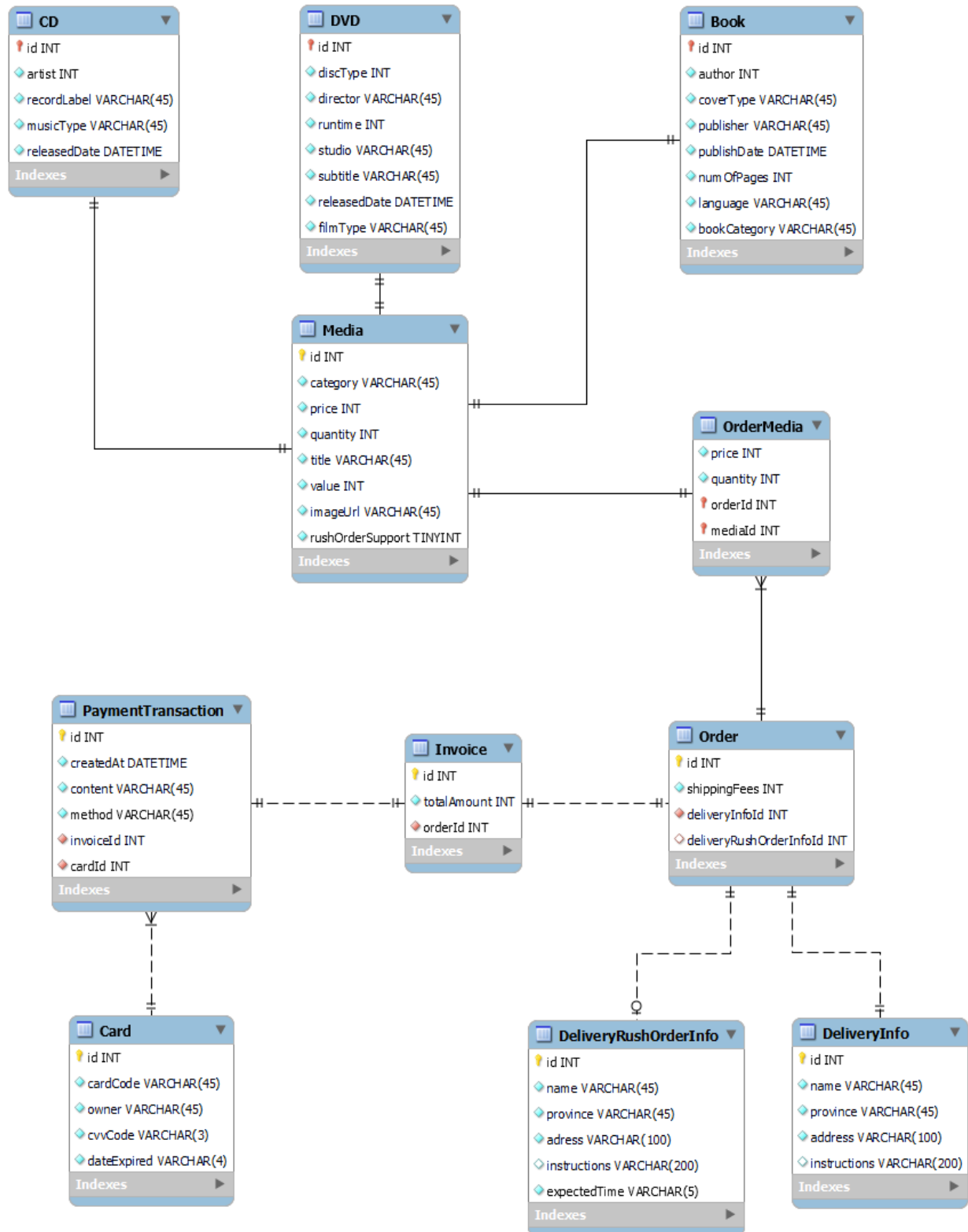
## DATA MODELING

## 1. Conceptual Data Model



## 2. Database Design

### 2.1 Logical Data Model



## 2.2 Physical Data Model

### - Media

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID, auto increment
2			category	VARCHAR(45)	Yes	Media type, e.g CD, DVD, Book
3			price	Integer	Yes	Current price
4			quantity	Integer	Yes	Number of products
5			title	VARCHAR(45)	Yes	Product name
6			value	Integer	Yes	Value of the product
7			imageUrl	VARCHAR(45)	Yes	Product image path
8			rushOrderSupport	Boolean	Yes	The product is supported to place rush order or not. YES or NO

### - CD

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x	x	id	Integer	Yes	ID, same as ID of Media of which type is CD
2			artist	VARCHAR(45)	Yes	Artist's name
3			recordLabel	VARCHAR(45)	Yes	Record label
4			musicType	VARCHAR(45)	Yes	Music genres
5			releasedDate	DATETIME	No	Release date

- DVD

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x	x	id	Integer	Yes	ID, same as ID of Media of which type is DVD
2			discType	VARCHAR(45)	Yes	Disc type
3			director	VARCHAR(45)	Yes	Director
4			runtime	Integer	Yes	Duration
5			studio	VARCHAR(45)	Yes	Manufacturer
6			subtitle	VARCHAR(45)	Yes	Subtitles
7			releasedDate	DATETIME	Yes	Release date
8			filmType	VARCHAR(45)	Yes	Genres

- Book

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x	x	id	Integer	Yes	ID, sam as ID of Media of which type is Book
2			author	VARCHAR(45)	Yes	Author
3			coverType	VARCHAR(45)	Yes	Cover type
4			publisher	VARCHAR(45)	Yes	Publishing house
5			publishDate	DATETIME	Yes	Date of publishing
6			numOfPages	Integer	Yes	Page number
7			language	VARCHAR(45)	Yes	Language
8			bookCategory	VARCHAR(45)	Yes	Book category

- Card

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID, auto increment
2			cardCode	VARCHAR(45)	Yes	Card code
3			owner	VARCHAR(45)	Yes	Cardholder
4			cvvCode	VARCHAR(3)	Yes	CVV code

5			dateExpired	VARCHAR(4)	Yes	Expiration date
---	--	--	-------------	------------	-----	-----------------

#### - DeliveryInfo

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID, auto increment
2			name	VARCHAR(45)	Yes	Receiver name
3			province	VARCHAR(45)	Yes	Provinces
4			instructions	VARCHAR(200)	No	Delivery instructions
5			address	VARCHAR(100)	Yes	Delivery address

#### - DeliveryRushOrderInfo

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID, auto increment
2			name	VARCHAR(45)	Yes	Receiver name
3			province	VARCHAR(45)	Yes	Provinces
4			instructions	VARCHAR(200)	No	Delivery instructions
5			address	VARCHAR(100)	Yes	Delivery address
6			expectedTime	VARCHAR(5)	Yes	Time is expected to delivery rush order

#### - Order

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID
2			shippingFees	Integer	Yes	Shipping fees
3		x	deliveryInfoId	Integer	Yes	Delivery info ID
4		x	deliveryRushOrderInfoId	Integer	No	Delivery rush order inf ID

**- OrderMedia**

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x	x	mediaId	Integer	Yes	Media ID
2	x	x	orderId	Integer	Yes	Order ID
3			price	Integer	Yes	Selling price
4			quantity	Integer	Yes	Number

**- Invoice**

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID
2			totalAmount	Integer	Yes	Total
3		x	orderId	Integer	Yes	Order ID

**- PaymentTransaction**

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID
2			createdAt	DATETIME	Yes	Date of creation
3			content	VARCHAR(45)	Yes	Transacton content
4			method	VARCHAR(45)	Yes	Payment methods
5		x	cardId	Integer	Yes	ID of used card
6		x	invoiceId	Integer	Yes	Invoice ID

-----  
 -- Table `aims`.`Media`  
 -----

```
CREATE TABLE IF NOT EXISTS `aims`.`Media` (
  `id` INT NOT NULL,
  `category` VARCHAR(45) NOT NULL,
  `price` INT NOT NULL,
  `quantity` INT NOT NULL,
```

```
`title` VARCHAR(45) NOT NULL,  
`value` INT NOT NULL,  
`imageUrl` VARCHAR(45) NOT NULL,  
`rushOrderSupport` TINYINT NOT NULL,  
PRIMARY KEY (`id`))  
ENGINE = InnoDB;
```

```
-- Table `aims`.`CD`  
-----
```

```
CREATE TABLE IF NOT EXISTS `aims`.`CD` (  
  `id` INT NOT NULL,  
  `artist` INT NOT NULL,  
  `recordLabel` VARCHAR(45) NOT NULL,  
  `musicType` VARCHAR(45) NOT NULL,  
  `releasedDate` DATETIME NOT NULL,  
  PRIMARY KEY (`id`),  
  CONSTRAINT `fk_CD_Media`  
    FOREIGN KEY (`id`)  
    REFERENCES `aims`.`Media` (`id`)  
    ON DELETE NO ACTION  
    ON UPDATE NO ACTION)  
ENGINE = InnoDB;
```

```
-- Table `aims`.`DVD`  
-----
```

```

CREATE TABLE IF NOT EXISTS `aims`.`DVD` (
  `id` INT NOT NULL,
  `discType` INT NOT NULL,
  `director` VARCHAR(45) NOT NULL,
  `runtime` INT NOT NULL,
  `studio` VARCHAR(45) NOT NULL,
  `subtitle` VARCHAR(45) NOT NULL,
  `releasedDate` DATETIME NOT NULL,
  `filmType` VARCHAR(45) NOT NULL,
  PRIMARY KEY (`id`),
  CONSTRAINT `fk_DVD_Media1`
    FOREIGN KEY (`id`)
      REFERENCES `aims`.`Media` (`id`)
      ON DELETE NO ACTION
      ON UPDATE NO ACTION)
ENGINE = InnoDB;

```

```

-----
-- Table `aims`.`Book`
-----

```

```

CREATE TABLE IF NOT EXISTS `aims`.`Book` (
  `id` INT NOT NULL,
  `author` INT NOT NULL,
  `coverType` VARCHAR(45) NOT NULL,
  `publisher` VARCHAR(45) NOT NULL,
  `publishDate` DATETIME NOT NULL,
  `numOfPages` INT NOT NULL,
  `language` VARCHAR(45) NOT NULL,

```



```
`bookCategory` VARCHAR(45) NOT NULL,  
PRIMARY KEY (`id`))  
ENGINE = BLACKHOLE;
```

```
-----  
-- Table `aims`.`Card`  
-----
```

```
CREATE TABLE IF NOT EXISTS `aims`.`Card` (  
  `id` INT NOT NULL,  
  `cardCode` VARCHAR(45) NOT NULL,  
  `owner` VARCHAR(45) NOT NULL,  
  `cvvCode` VARCHAR(3) NOT NULL,  
  `dateExpired` VARCHAR(4) NOT NULL,  
  PRIMARY KEY (`id`))  
ENGINE = InnoDB;
```

```
-----  
-- Table `aims`.`DeliveryInfo`  
-----
```

```
CREATE TABLE IF NOT EXISTS `aims`.`DeliveryInfo` (  
  `id` INT NOT NULL,  
  `name` VARCHAR(45) NOT NULL,  
  `province` VARCHAR(45) NOT NULL,  
  `address` VARCHAR(100) NOT NULL,  
  `instructions` VARCHAR(200) NULL,  
  PRIMARY KEY (`id`))  
ENGINE = InnoDB;
```

```

-----
-- Table `aims`.`DeliveryRushOrderInfo`
-----

CREATE TABLE IF NOT EXISTS `aims`.`DeliveryRushOrderInfo` (
  `id` INT NOT NULL,
  `name` VARCHAR(45) NOT NULL,
  `province` VARCHAR(45) NOT NULL,
  `adress` VARCHAR(100) NOT NULL,
  `instructions` VARCHAR(200) NULL,
  `expectedTime` VARCHAR(5) NOT NULL,
  PRIMARY KEY (`id`))
ENGINE = InnoDB;

```

```

-----
-- Table `aims`.`Order`
-----

CREATE TABLE IF NOT EXISTS `aims`.`Order` (
  `id` INT NOT NULL,
  `shippingFees` INT NOT NULL,
  `deliveryInfold` INT NOT NULL,
  `deliveryRushOrderInfold` INT NULL,
  PRIMARY KEY (`id`),
  INDEX `fk_Order_DeliveryInfo1_idx` (`deliveryInfold` ASC) VISIBLE,
  INDEX `fk_Order_DeliveryRushOrderInfo1_idx` (`deliveryRushOrderInfold` ASC) VISIBLE,
  CONSTRAINT `fk_Order_DeliveryInfo1`
    FOREIGN KEY (`deliveryInfold`)

```

```

REFERENCES `aims`.`DeliveryInfo` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION,

CONSTRAINT `fk_Order_DeliveryRushOrderInfo1`

FOREIGN KEY (`deliveryRushOrderInfoId`)

REFERENCES `aims`.`DeliveryRushOrderInfo` (`id`)

ON DELETE NO ACTION

ON UPDATE NO ACTION)

ENGINE = InnoDB;

-----

-- Table `aims`.`OrderMedia`

-----

CREATE TABLE IF NOT EXISTS `aims`.`OrderMedia` (

  `price` INT NOT NULL,

  `quantity` INT NOT NULL,

  `orderId` INT NOT NULL,

  `mediaId` INT NOT NULL,

  PRIMARY KEY (`orderId`, `mediaId`),

  INDEX `fk_OrderMedia_Media1_idx` (`mediaId` ASC) VISIBLE,

  CONSTRAINT `fk_OrderMedia_Order1`

    FOREIGN KEY (`orderId`)

      REFERENCES `aims`.`Order` (`id`)

        ON DELETE NO ACTION

        ON UPDATE NO ACTION,

  CONSTRAINT `fk_OrderMedia_Media1`

    FOREIGN KEY (`mediaId`)

      REFERENCES `aims`.`Media` (`id`)

```

```

        ON DELETE NO ACTION
        ON UPDATE NO ACTION)
ENGINE = InnoDB;

-----

-- Table `aims`.`Invoice`
-----

CREATE TABLE IF NOT EXISTS `aims`.`Invoice` (
  `id` INT NOT NULL,
  `totalAmount` INT NOT NULL,
  `orderId` INT NOT NULL,
  PRIMARY KEY (`id`),
  INDEX `fk_Invoice_Order1_idx` (`orderId` ASC) VISIBLE,
  CONSTRAINT `fk_Invoice_Order1`
    FOREIGN KEY (`orderId`)
      REFERENCES `aims`.`Order` (`id`)
        ON DELETE NO ACTION
        ON UPDATE NO ACTION)
ENGINE = InnoDB;

```

```

-----

-- Table `aims`.`PaymentTransaction`
-----

CREATE TABLE IF NOT EXISTS `aims`.`PaymentTransaction` (
  `id` INT NOT NULL,
  `createdAt` DATETIME NOT NULL,
  `content` VARCHAR(45) NOT NULL,

```

```
`method` VARCHAR(45) NOT NULL,  
`invoiceId` INT NOT NULL,  
`cardId` INT NOT NULL,  
PRIMARY KEY (`id`),  
INDEX `fk_PaymentTransaction_Invoice1_idx` (`invoiceId` ASC) VISIBLE,  
INDEX `fk_PaymentTransaction_Card1_idx` (`cardId` ASC) VISIBLE,  
CONSTRAINT `fk_PaymentTransaction_Invoice1`  
    FOREIGN KEY (`invoiceId`)  
    REFERENCES `aims`.`Invoice` (`id`)  
    ON DELETE NO ACTION  
    ON UPDATE NO ACTION,  
CONSTRAINT `fk_PaymentTransaction_Card1`  
    FOREIGN KEY (`cardId`)  
    REFERENCES `aims`.`Card` (`id`)  
    ON DELETE NO ACTION  
    ON UPDATE NO ACTION)  
ENGINE = InnoDB;
```